

OpenIPO System Diagram

Figure 1

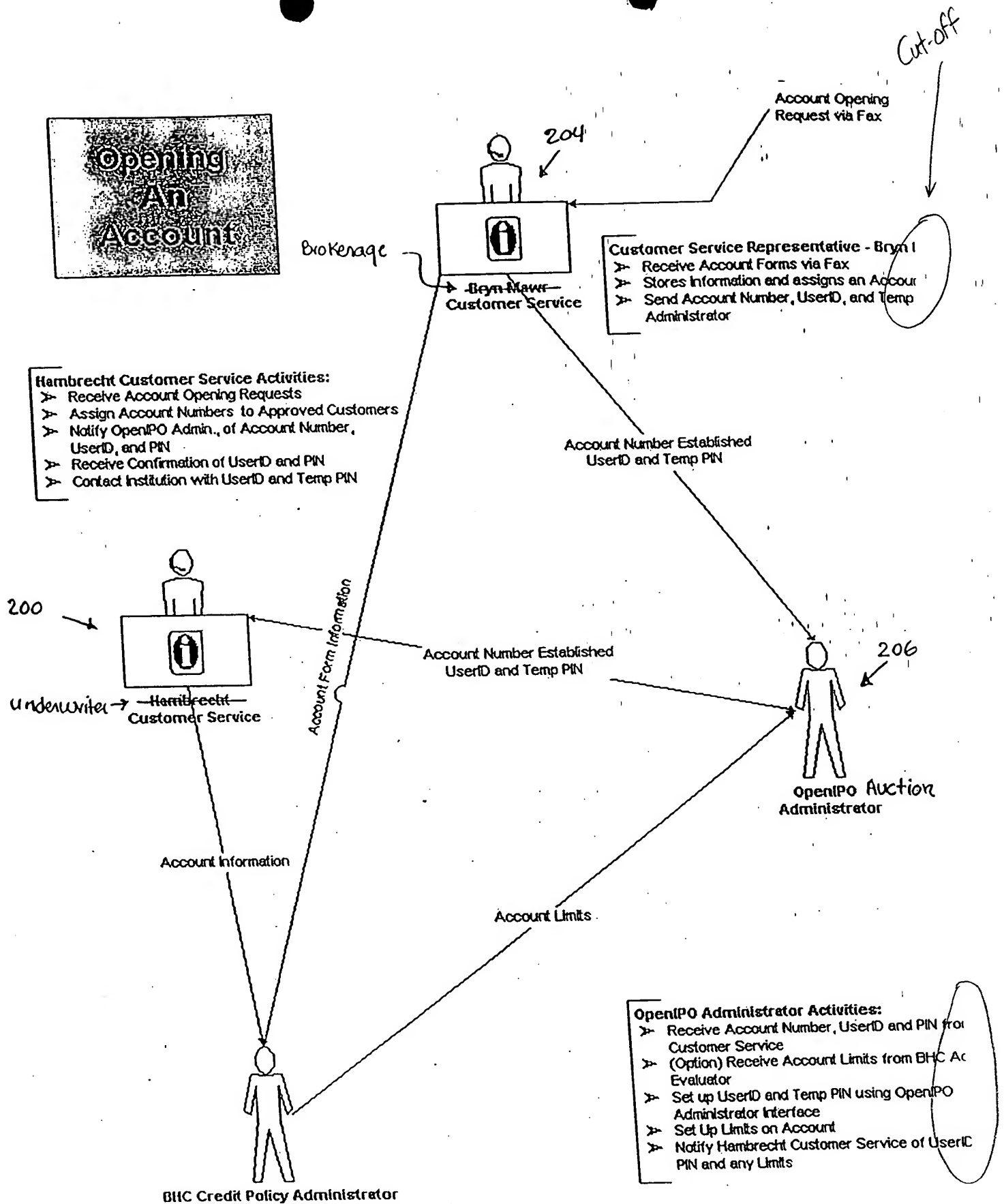


Figure 2

Setting Up A Deal

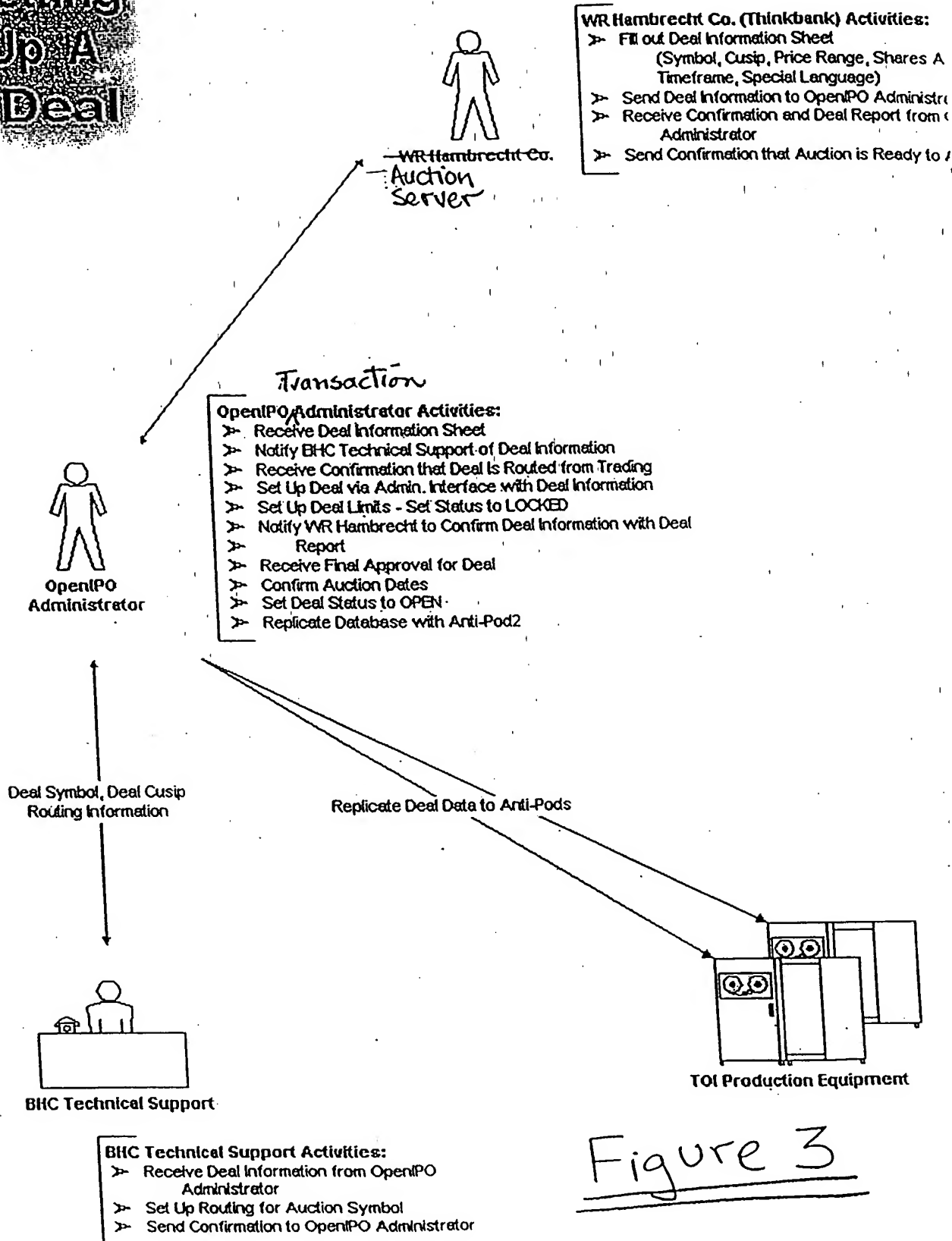


Figure 3

Closing A Deal



WR Hambrecht Co.

WR Hambrecht Co. Activities:

- Notify OpenIPO Administrator to Start the Closing
- Receive Notification that Deal is Locked
- Conduct Final Bid Confirmation Process (~24 h)
- Notify OpenIPO of Auction Status (Re-Open or Close)
- Receive Notification that Deal is Closed from OpenIPO Admin.



OpenIPO
Administrator

OpenIPO Administrator Activities:

- Receive Notification that Deal is going to Close
- Update Closing Date in Admin. Interface
- Set Deal Status to LOCKED
- Replicate Database to Anti-Pod2
- Notify BHC Technical Support to delete Symbol Routing
- Notify WR Hambrecht that Deal is Locked
- Receive Notification of Auction Status (Re-Open or Close) from WR Hambrecht
- If Re-Open, change Deal Status to OPEN and Notify HC Technical Support - Trading to establish
- If Close, Change Deal Status to Close and Notify BHC Technical Support - Trading to delete Symbol
- Receive Confirmation that routing is deleted from BHC Technical Support - Trading
- Notify WR Hambrecht that Deal has been Closed

Routing Instructions/ Confirmation

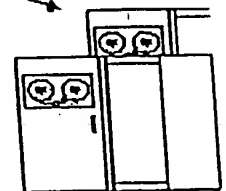
Replicate Deal Data to Anti-Pods



BHC Technical Support Trading

SIS/Trading Support Activities:

- Receive Routing Instructions from OpenIPO Administrator
- Delete Routing for Deal Symbol
- Send Confirmation that Routing is terminated.



TOI Production Equipment

Figure 4

Post Execution Clean Up

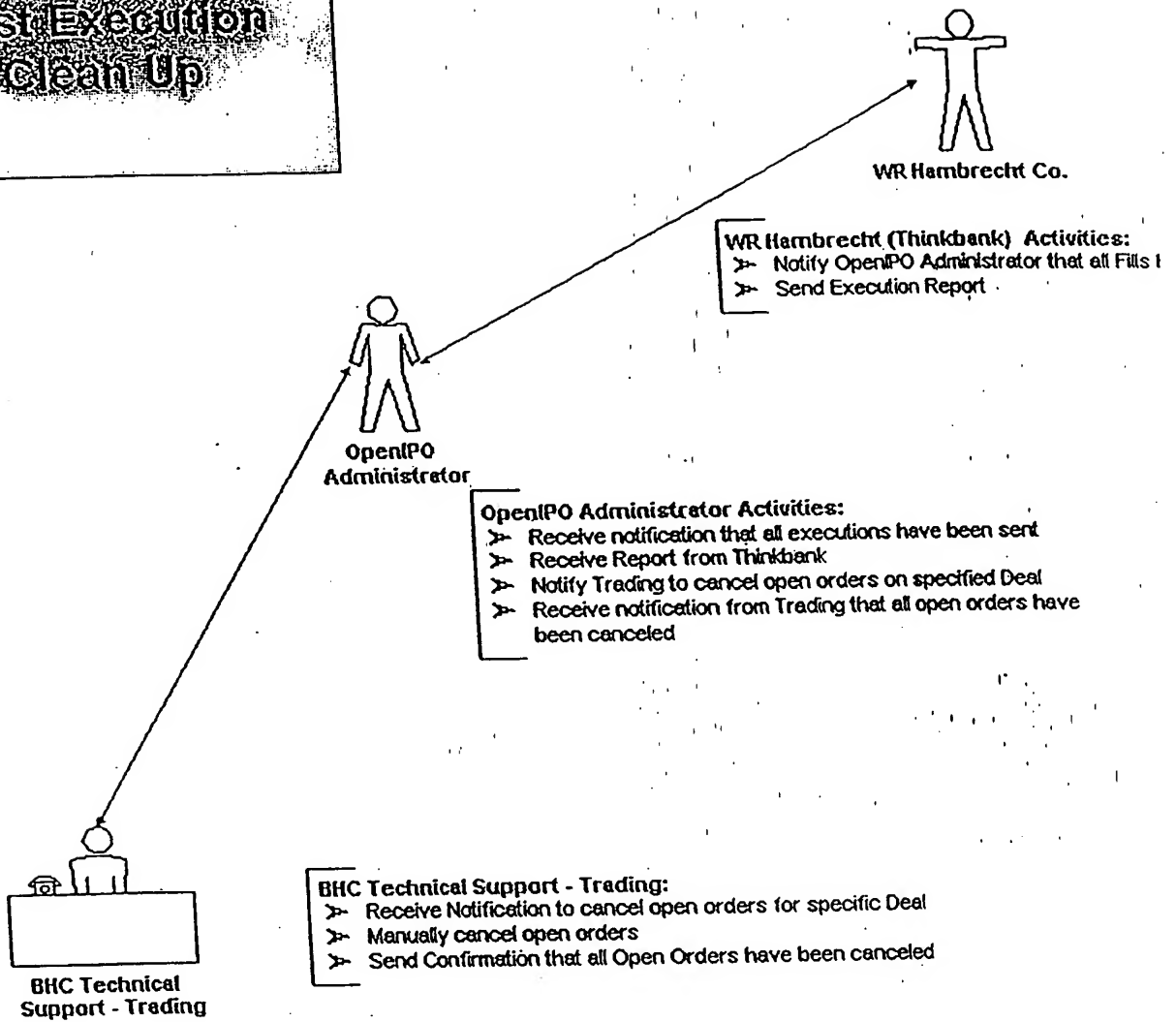


Figure 5

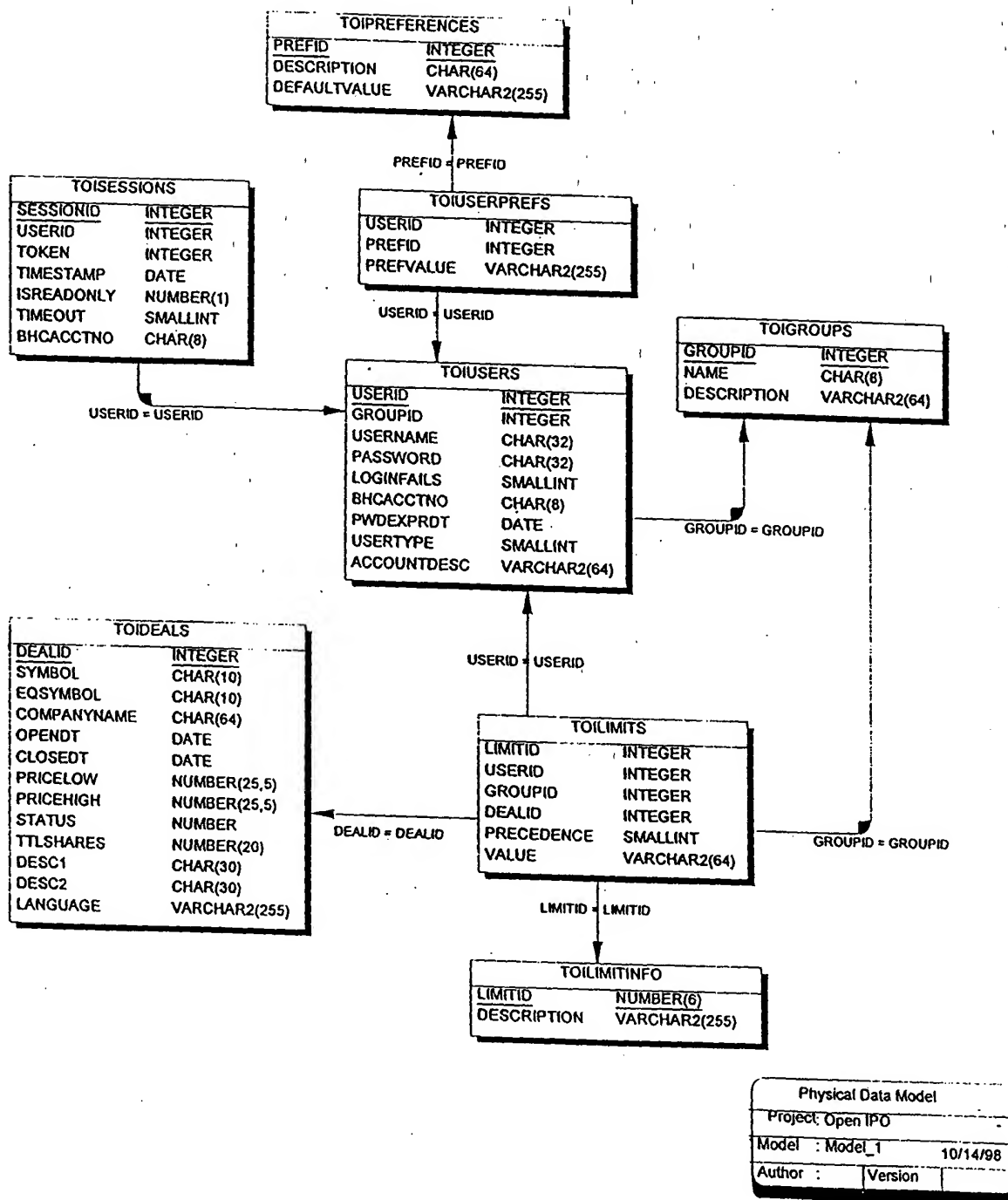


FIGURE 6

①

~~Architecture~~ Architecture of Auction Server

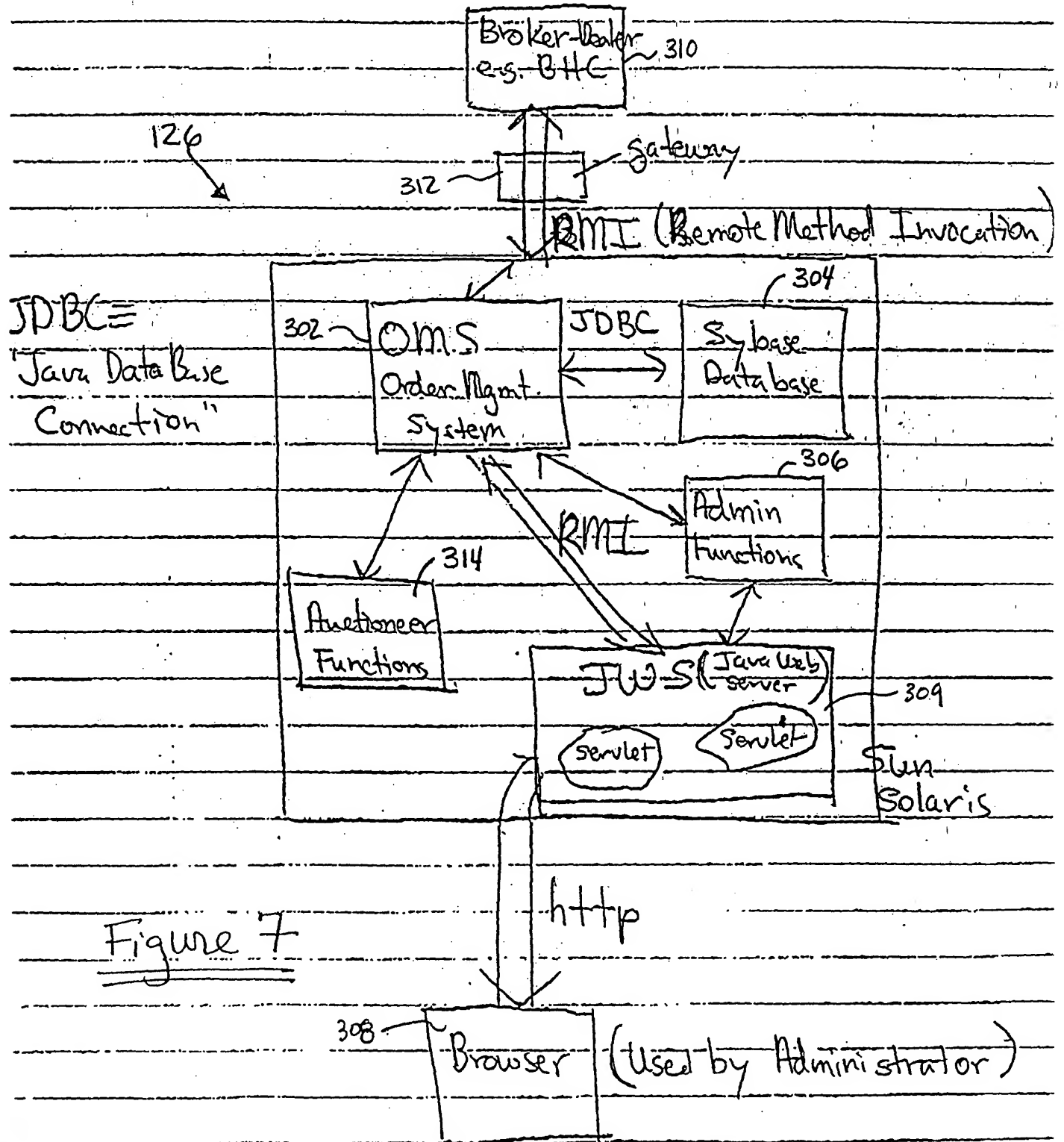


Figure 7

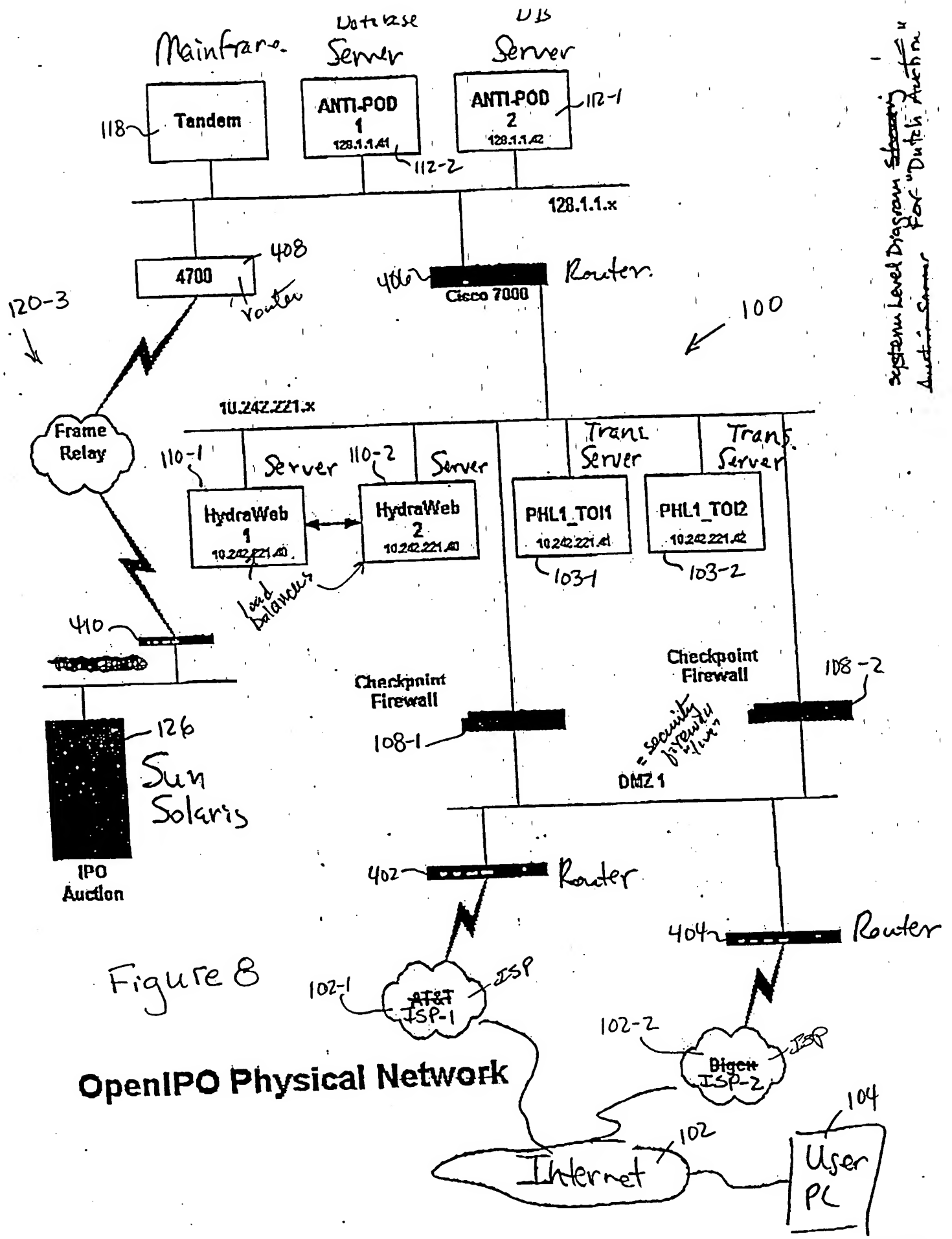
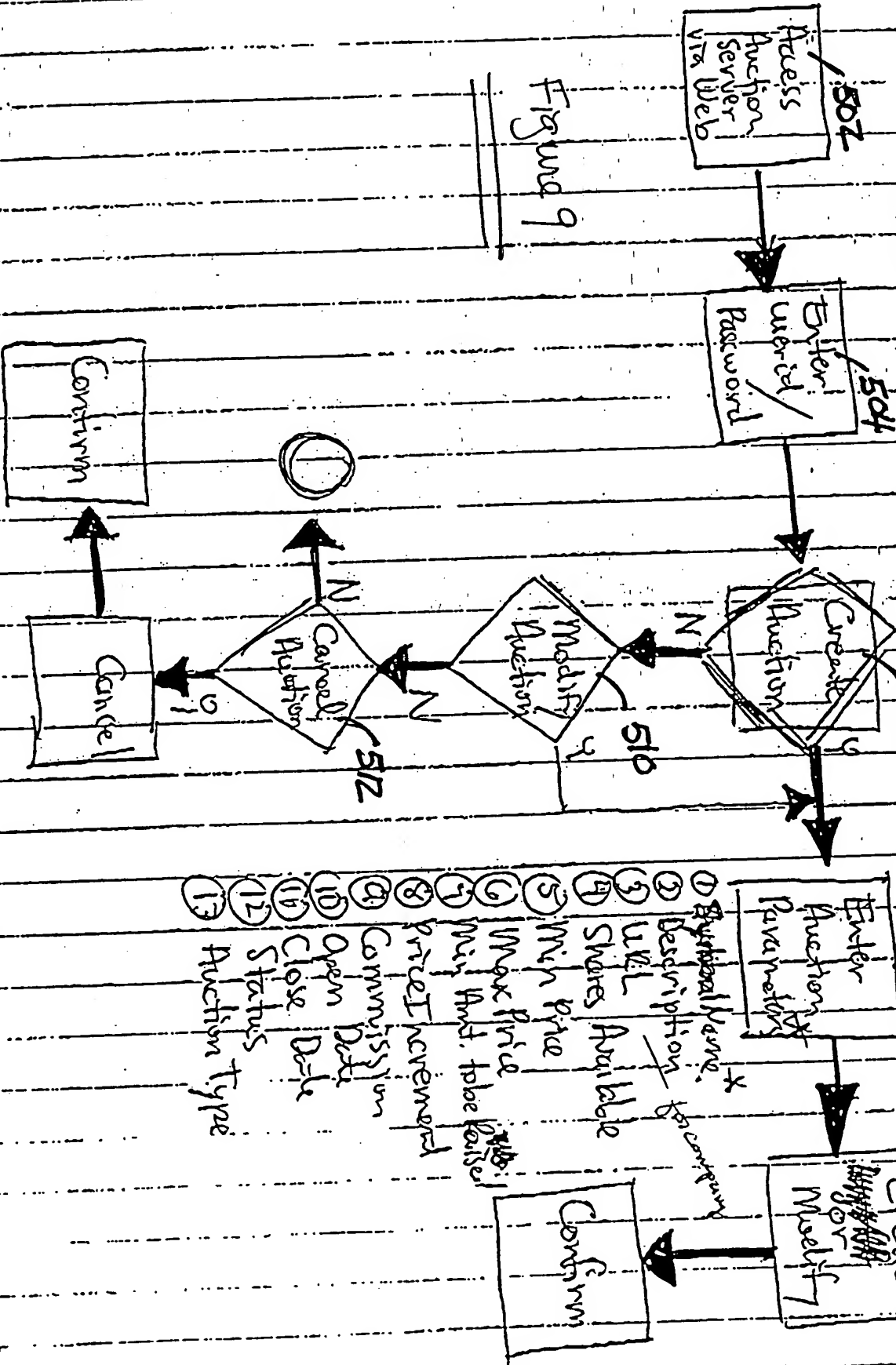


Figure 8
OpenIPO Physical Network

System Level Diagram showing the OpenIPO Physical Network architecture. The diagram includes the following components and connections:

Business Process Flow:

Open ID Admin: Pre-Auction or During Auction



- ① Auction Name
- ② Description
- ③ U/L
- ④ Shares Available
- ⑤ Min Price
- ⑥ Max Price
- ⑦ Min Amt. to be raised
- ⑧ Price Increment
- ⑨ Commission
- ⑩ Open Date
- ⑪ Close Date
- ⑫ Status
- ⑬ Auction Type

Business Process Flow
~~Open IPO Admin~~ Close and Execute Auction

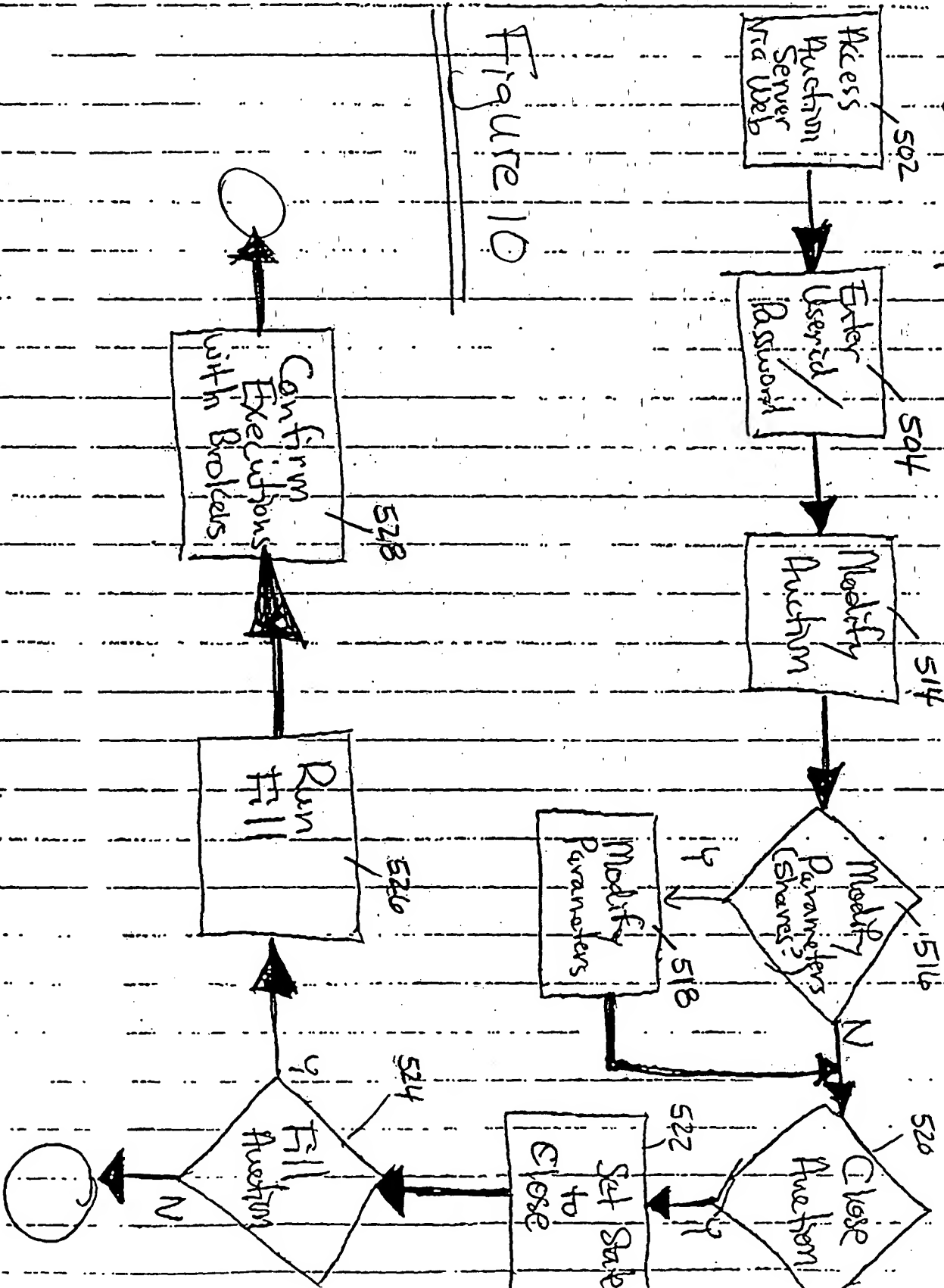


Figure 10

Business Process Flow

Bid Flow

Bid Order from User

Order Related to Customer Account

Order Cancel Parallel

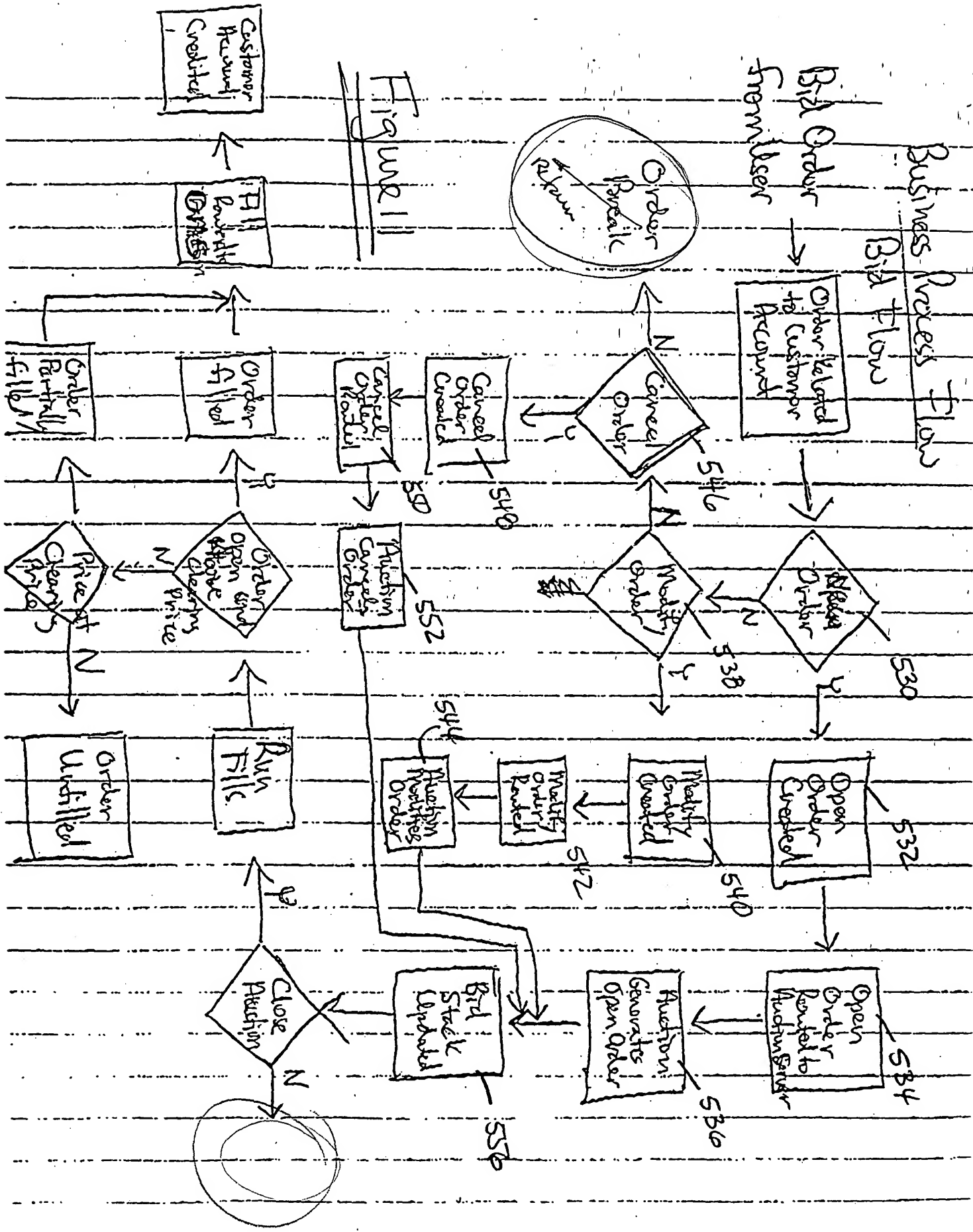


Figure 11

Flow	User
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
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99	99
100	100



Business Process Flow Order Settlement

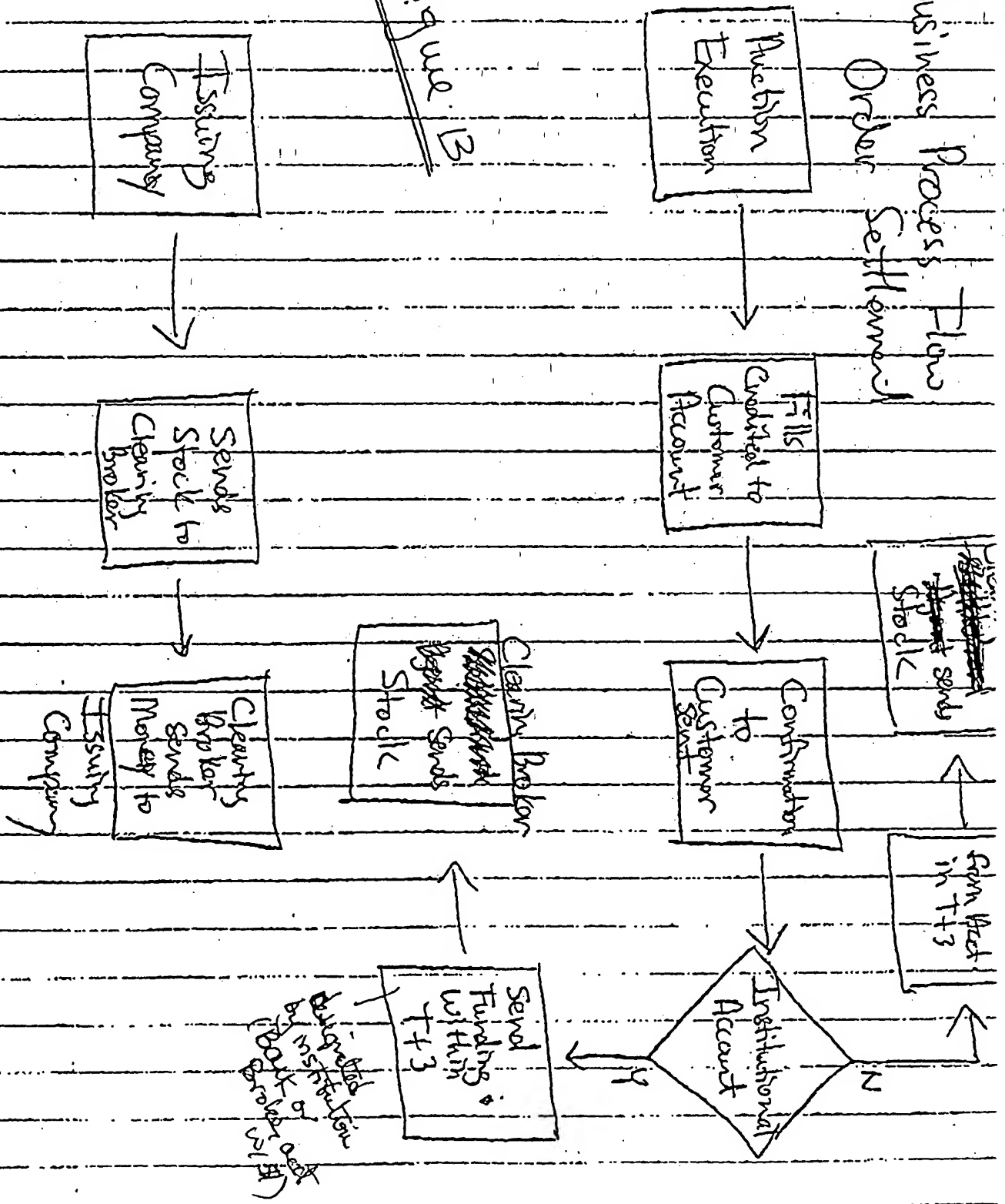


Figure 13

Business Process Flow Dutch Auction Algorithm:

$M = \#$ of Price levels

$P_p =$ price at p th price level : $\begin{cases} P_1 = \text{Max Price Level} \\ P_M = \text{Min. Price Level} \end{cases}$

$X_p =$ # of Shares at price P_p
 $B_i =$ # of shares of i th Bid

$P_i =$ price of i th bid

$f_i =$ # of offered shares

Pricing

Order Bids in Descending order

$T = X_1$
 $p = 1$

$T \geq S$

$P = M$

$T = X_{p+1}$
 $p = p + 1$

Clearing Price $P = P_p$

$f_i = B_i$

$f_i > P$

$f_i < P$

$f_i = 0$

$f_i = B_i (S - T + X_i)$
 $(T - S)$

Figure 14

Allocation